TUCSON SUPPLEMENTAL RETIREMENT SYSTEM BOARD OF TRUSTEES AGENDA

Meeting minutes from Thursday, November 19, 2015 Finance Department Conference Room, 5th floor East City Hall, 255 West Alameda Tucson, Arizona 85701

Members Present:

Michael Coffey, Acting Chairman Kevin Larson, City Manager Appointee Rebecca Hill, Interim HR Director Silvia Amparano, Director of Finance Jorge Hernández, Elected Representative John O'Hare, Elected Retiree Representative

Staff Present:

Dave Deibel, Deputy City Attorney

Karen Tenace, Deputy Director of Finance Silvia Navarro, Treasury Administrator Art Cuaron, Treasury Finance Manager Dennis Woodrich, Lead Pension Analyst Dawn Davis, Administrative Assistant

Guests Present:

Claire Beaubien, CTRA Representative Gordon Weightman, Callan Associates

Absent/Excused:

Robert Fleming, Chairman

Acting Chairman Michael Coffey called the meeting to order at 8:32 AM.

A. Consent Agenda

- 1. Approval of October 30th Board Meeting Minutes
- 2. Retirement ratifications for November 2015
- 3. October 2015 TSRS expenses and revenue compared to budget

John O'Hare requested the minutes be moved to the meeting scheduled on December 17, 2015 as he had not been able to review them prior to the meeting.

A motion to approve Consent Agenda Items A2 and A3 was made by Silvia Amparano, 2^{nd} by Rebecca Hill, and passed by a vote of 5 - 0 (Acting Chairman Coffey did not vote).

B. Administrative Discussions

1. Selection of Board Member to Participate in Oral Board Interviews for Pension Administrator

Silvia Navarro stated at the 10/30/15 meeting staff advised that one board member was needed to participate in the oral board interviews for the new Pension Administrator. Chairman Fleming had advised staff that he would like to appoint John O'Hare, Michael Coffey, or Kevin Larsen to fill that role.

Kevin Larson asked about the anticipated schedule, and whether it would be before the end of the year.

Ms. Navarro answered they would be held in January.

Silvia Amparano said it also depended on how many applicants met the minimum qualifications, but the interviews will not be scheduled until the first week of January.

Mr. Larson asked how long they would be.

Ms. Amparano answered they were typically about an hour long and scheduled in blocks.

Karen Tenace said they were tentatively scheduled for the week of January 4, 2016.

Acting Chairman Coffey asked whether Chairman Fleming had committed to participating in the hiring interviews to take place after the oral boards had been completed.

Ms. Amparano answered yes.

Mr. Larson committed to participating in the oral board interviews.

John O'Hare asked if the oral board interviews were open to the other Board members who wanted to observe.

Rebecca Hill answered not typically.

Michael Coffey asked if staff was still planning on scheduling a meet and greet where the Board members could interact with the candidates.

Ms. Hill answered yes and it would be a more appropriate way for the Board to become familiar with the candidates.

Dave Deibel stated the problem with a non-participating Board member observing the interviews is that they had to be conducted in very similar and impartial ways.

Ms. Hill explained that a non-participating Board member would not be able to express any opinions or make any recommendations.

Ms. Navarro advised a schedule would be sent to Mr. Larson at a later date once it is established.

Mr. Larson asked if they expected around 4 or 5 candidates.

Ms. Amparano answered it depended on how many applicants met the minimum qualifications.

Ms. Tenace explained oral boards tend to have more candidates than the hiring interviews. There have been around 14 applications submitted but they have not been screened to see if the applicant meets the minimum qualifications yet. All of the applicants who meet the minimum qualifications will get an opportunity to participate in an oral board interview, so the time commitment could be 2 - 3 days. The cutoff date for submitting applications is 12/9/15, but if they screen the applicants and not a lot of them meet the minimum requirements the posting could be extended and they would have to adjust the hiring schedule accordingly.

2. Update on TSRS Code Revisions to be Approved by Mayor and Council

Silvia Amparano said the Code Revisions item had been scheduled for the Mayor and Council Regular meeting of 12/8/15. At the Agenda Committee meeting a study session item was requested for 12/8/15 so that she could describe the Code Revisions to Mayor and Council so they could ask questions before voting on it at the regular meeting. The City Manager was briefed on the impact of the funding policy, and at that point he was not willing to support the Board's recommendation of a 27.5% minimum contribution rate. If Mayor and Council decide to not to approve the Board's recommendation the item may have to be rescheduled for 12/15/15, or early January 2016. It was unknown whether the City Manager would support the rounding policy

or the addition of the administration expenses to the contribution rates. Budget has been asked to run numbers on the impact to the general fund and other City funds. This information will be presented to the Mayor and Council. Board members are welcome to attend the meetings in case the Mayor and Council want them to speak. Catherine Langford will be attending the meeting as the TSRS lawyer.

Dave Deibel asked if the item scheduled on the regular session agenda would be removed.

Ms. Amparano answered the item would remain on the regular agenda but Mayor and Council can request it be moved to another meeting. The fiscal year 2017 contribution rates might be added to this agenda item as well.

Mr. Deibel stated the IRS code changes were due soon.

Ms. Amparano answered they were due by the end of January 2016.

Acting Chairman Coffey asked what the possible outcomes were for the meeting of 12/8/15.

Ms. Amparano answered currently the City is required to pay 100% of the actuarially required contribution (ARC), the funding policy changes it to actuarially determined contribution (ADC) which includes the rounding policy, the administrative expense, and a minimum of 27.5% until the fully funded status is reached. The difference between the ARC and the 27.5% contributions is \$3M. If they approve the Code revisions they are committing to paying more than the ARC.

Acting Chairman Coffey asked if Mayor and Council could approve parts of the code revisions without approving them all.

Ms. Amparano answered yes and they would be provided with 5 options: the current contribution rate, the ARC of 24.99% for FY 2017, 25% which is the ARC plus the rounding, 25.52% which is the ARC plus the administrative expense, and 27.5% as the minimum.

John O'Hare asked if the City Manager's objection was purely from a financial perspective.

Ms. Amparano answered yes, but he understands the Board's responsibility as fiduciaries to maintain the long term sustainability of the plan, and this would be explained to Mayor and Council.

3. 2016 TSRS Board Meeting Calendar

Silvia Navarro advised staff was required to send the yearly TSRS Board Meeting Calendar to the City Clerk's office for posting, and asked if the Board wanted to cancel the November board meeting since it is only 3 weeks after the retreat staff has a difficult time getting the item materials prepared for distribution in the board packet, and because they get the materials late the Board has trouble reviewing them before the meeting.

John O'Hare asked if the Board had to hold monthly meetings because the retirements have to be ratified on a monthly basis.

Silvia Amparano answered yes.

Ms. Navarro clarified the Board wanted to continue having the November meetings.

The Board agreed they wanted to continue having meetings in November.

C. Investment Activity Report

1. TSRS Portfolio composition, transactions and performance review for 10/31/15

Art Cuaron said the Total Fund was at \$719.8M as of 10/31/15, which was up \$30.2M from September with the majority of increases occurring in stocks as the market continued to rebound from August and September. On 11/19/15 the Total Fund is at \$718M.

Calendar YTD Net of Fees – The Total fund is at 0.98% which is up 4.24% over the September return of -3.2%, but down from the index at 2.3%. Total fixed returned 1.25% which is up 1.39% over the September return of -0.14%, and is ahead of the benchmark which is at 1.16%. Total equities returned -0.40% which is up 6.0% over the September return of -6.4%, but still trailing the composite which is at 1.36%. Total real estate returned 12.44% which is up 1.52% over the September return of 10.92%, and is ahead of the benchmark at 11.29%. Total infrastructure is at -0.10% which is down 0.55% from the September return of 0.45%, and trailing the CPI which is at 4.65%.

Fiscal YTD Net of Fees – The total fund is at -1.85% which is a 4.11% improvement over September but still down from the index at -0.07%. Total fixed saw a 1.37% increase over September at 0.48% with the benchmark at 1.26, so it is still lagging. Total equities saw a 5.81% increase over the September return of -3.56 but still trails the composite which stands at -1.27 as of 10/31/15. Total real estate saw a 1.4% increase over the September return of 3.67% and is in line with the benchmark at 3.68%. Total infrastructure had a 0.56% drop from Sept at 0.38% and trails the CPI which returned 0.98%.

Trailing One Year Net of Fees – The total fund returned 1.77% which is a 2.85% increase over the September return of -1.08% but trailing the index which returned 3.43%. Total fixed returned 0.84% which represents a 27 basis point increase over the September return of 0.57%, but still trails the benchmark at 1.97%. Total equities returned 0.66% representing a 4.3% increase over September returns of -3.64%, but trails the composite which is 2.64% as of 10/31/15. Total real estate returned 14.43% which is a 78 basis point increase over the September return of 13.65%, and slightly trails the benchmark at 14.92%. Total infrastructure returned 0.73% which is down 13 basis points from the September returns of 0.86% and continues to trail the CPI at 4.18%.

2. Callan's quarterly review of TSRS investment manager performance for September 30, 2015

Gordon Weightman said there were major themes in occurrences during the 3rd quarter. One of them was a flight to quality, so treasuries performed very well while risker assets were sold off. It was driven by macro level noise and fear, some of which can be attributed to what has happened in China even though they have the world's 2nd largest economy, an emerging market economy. Between a quarter and a third of the world's natural resources are imported to China, and with their slowing growth some of the emerging market commodity producers are worried that they will buy less resulting in a slowing of the producers growth as well. China is fighting their slowing growth but ultimately it is a demographics problem. They suddenly devalued their currency which is even worse for the commodity producers looking to export because now it is more expensive for China to buy these outside commodities. They also reduced the amount of cash that banks are required to hold to support their riskier assets, and decreased interest rates. The other factor was the Fed and the speculation about raising interest rates changing multiple times. All signs indicate interest rates will be increased in December 2015. Janet Yellen has said she expects a rate hike in December, according to the Wall Street Journal. An increase in interest rates should be a good thing as it implies that the economy is able to support itself again, but in this case investors are wondering what will happen with their fixed income portfolio. There will be a capital loss because of the duration and interest rate risk inherent in a bond portfolio. On the other side there is so much cash on the sideline and on balance sheets of corporations and individuals right now that a rate hike of 25 basis points could actually prove to be a stimulus. In the 3rd guarter US GDP was 1.5%, 3.9% in the 2nd quarter. About 1% of the difference between the 2nd and 3rd quarters was due to inventory. Companies and manufacturers were stocking their shelves in the 2nd guarter and there was not a need to do so in the 3rd. The consumer is spending and housing is up so there is a lot of good news. Inflation is 0 if you include energy; if energy is removed it was almost 2%, which is the Fed's target. The unemployment rate is at 5% with a really strong jobs report through October. The flight to quality previously mentioned can be seen in the following table.

Asset Class Performance

Periods Ending September 30, 2015

Periodic Table of Investment Returns for Periods Ended September 30, 2015

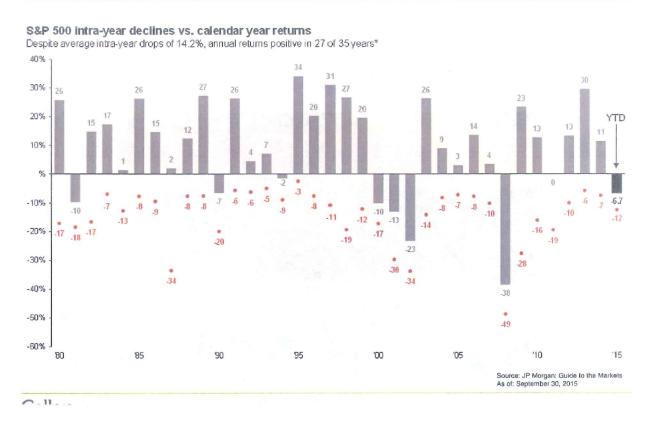
Last Quarter	Last 3 Quarters	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
	Barclays:Aggregate	S&P:600 Small	S&P:600 Small	S&P:600 Small	S&P:600 Small
		Cap	Cap	Cap	Cap
1.2%		3.8%	13.0%	14.0%	7.7%
3 Month T-Bill	3 Month T-Bill	Barclays:Aggregate	S&P:500	S&P:500	S&P:500
					Strain Strain
0.0%	0.0%	2.9%	12.4%	13.3%	6.8%
S&P:500	MSCI:EAFE US\$	3 Month T-Bill	MSCI:EAFE US\$	MSCI:EAFE US\$	
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(6.4%)	(5.3%)	0.0%	5.6%	4.0%	4.6%
S&P:600 Small	S&P:500	S&P:500		Barclays:Aggregate	MSCI:Emer
Сар					Markets
(9.3%)	(5.3%)	(0.6%)		3.1%	4.6%
MSCI:EAFE US\$	S&P:600 Small	MSCI:EAFE US\$	3 Month T-Bill	3 Month T-Bill	MSCI:EAFE US\$
	Cap				
(10.2%)	(5.5%)	(8.7%)	0.1%	0.1%	3.0%
MSCI:Emer	MSCI:Emer	MSCI:Emer	MSCI:Emer	MSCI:Emer	3 Month T-Bill
Markets	Markets	Markets	Markets	Markets	
(17.8%)	(15.2%)	(19.0%)	(4.9%)	(3.2%)	1.3%

Bonds were the top performer at 1.2% and all equities were negative, some in double digits. Looking over the last 5 years it has been an extended bare market for emerging market equities, one of the longest ever seen; it is a very volatile asset class where big swings can be seen in short periods of time.

Acting Chairman Coffey expressed concern over the Board's decision to move into international emerging markets recently.

Mr. Weightman clarified the Board had chosen to get closer to a market capitalization weighting in emerging markets with their active managers. October was a good month; the S&P 500 was up 8.4%, YTD large cap US equities are positive, a little over 1%. ACWI ex-US, which is developed and emerging markets outside of the US, is up 7.4%, and interest rates went up on bonds so the aggregate was at 0%. October was a good month but remember if an investor has \$1 and 10% is lost, the investor has only \$0.90 and more than 10% has to be earned to get back to \$1.

Market Volatility



The graph above gives perspective to the intra-year decline of the S&P 500. The average intra-year decline for the S&P 500 is over 14%, the Board's is down 12% as of 9/30/15. The red dots are intra-year declines, so peak to trough, of the S&P 500. From 1980 through 2015 the average of those declines is 14.2%. The Board's decline of 12% as of 9/30/15 is within the realm of what has been seen historically in other calendar years. The YTD return down 6.7% for the S&P 500, but through October it is 1.2%. It is not uncommon to see these types of declines and still have good end of year results.

Acting Chairman Coffey asked for further explanation of an intra-year peak and trough.

Mr. Weightman answered in a calendar year with up to a 5% return before there is a selloff in the market, the red dots capture the largest decline intra-calendar year, so if the market peaks on June 30th and then declines from June 30th until September 30th, the difference between the highest part of the market and the lowest part of the market would be the intra-year decline. The graph is saying that in the face of many intra-year declines, which are normal, there have still been a lot of positive results. That may not be the case this year, but it is not uncommon to see a decline like the one the Board recently saw through the 3rd quarter.

Growth has outperformed value stocks for over 10 years now in US equity returns, largely due to energy because it has a larger weighting in value indexes than it does in growth. Energy value was down 19% in the quarter, in small cap stocks it is down 33%. In the quarter the more defensive areas of the market, like utilities, performed well at 4.2%. Whenever interest rates decline utilities usually do well because they are dividend paying stocks and people like that income component. Some of the more cyclical sectors had lower returns. Europe seems to be improving from an economic perspective. There is hope that lower oil prices will be a stimulus, and they have an easing monetary policy in place. Japan is down 11.8%. Emerging markets are down 17.8% and were hit hard by the strong Dollar. In local currency emerging markets were down 12%. The strengthening US Dollar vs. emerging market currencies resulted in an additional -5% return. The aggregate was up 1.2%, treasuries were up 1.8%, and all the other sectors were lower. Spreads widened on credit and credit is up 0.53%. High yield was down 4.9%, there are a lot of energy issues in the high yield index which

contributed to the decline. This is a flight to quality which has been seen before and the Board has 30% in fixed income which helps to buffer periods like this.

Jorge Hernández asked what long term effect Callan anticipated a strong Dollar would have on the portfolio.

Mr. Weightman answered a strong Dollar will hurt the fund's non-US equity exposure, because when any currency is exchanged the US Dollar is more expensive which will cut into the Board's returns. There is also a thought that the US Dollar could continue to strengthen because the US is on firmer ground than other parts of the world. If interest rates go up it could attract more capital, US treasuries at 2% on the 10 year are already attractive vs. other developed world yields. If foreign investors buy treasuries they would have to exchange their currencies into US Dollars which provides potential headwinds. From a growth perspective it can hurt the trade gap because US goods become much more expensive to the rest of the world all of a sudden, but products can be purchased from the world at lower prices because the US Dollar is stronger. Longer term it could have an effect on the GDP, in the short term looking out over the portfolio a continued increase in the strength of the US Dollar could hurt the non-US exposure.

Mr. Hernández asked about the consensus regarding the interest rate and whether the Fed will actually raise it.

Mr. Weightman answered everything he heard pointed toward a rate hike in December 2015.

Silvia Amparano asked how quickly it would rise.

Mr. Weightman answered Janet Yellen stated she expected a gradual tightening. If the US were to go into another recession the Fed could not do anything to fight it, outside of bond buying programs, because interest rates are already at 0%. Raising interest rates would be a good thing so that the Fed has that option if necessary.

John O'Hare clarified that 40% of earnings from the S&P 500 come from overseas.

Mr. Weightman answered that 40% of revenues from the S&P 500 come from overseas.

Mr. O'Hare asked how the strengthening Dollar affects that.

Mr. Weightman explained that it was very hard to say because a lot of companies hedge their currency exposure. With interest rates very low in the US there have been many institutional investors and individuals looking for riskier assets with higher yields. As a result there has been a lot of money going into emerging markets, debt and equity. Emerging markets are smart, issuing their debt in US Dollars, an investor can buy emerging market debt in local currency or US Dollars; so an interest rate hike means that on the debt in US Dollars the interest rate service goes up and outflows of capital goes up also. So in the short term there could be another headwind for emerging markets with a rate hike.

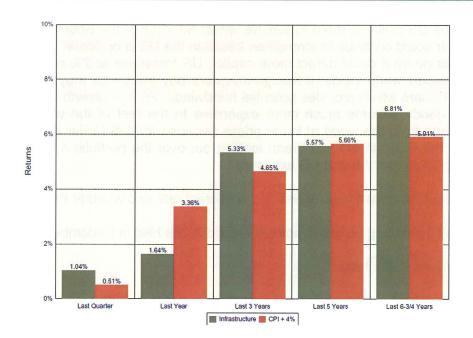
Mr. O'Hare said Macquarie was down 700 basis points vs. the index and asked how much of that was due to the strengthening US Dollar.

Mr. Weightman directed the Board to turn to page 79 of the Quarterly Review.

Infrastructure Period Ended September 30, 2015

Quarterly Summary and Highlights

 Infrastructure's portfolio outperformed the CPI + 4% by 0.53% for the quarter and underperformed the CPI + 4% for the year by 1.72%.

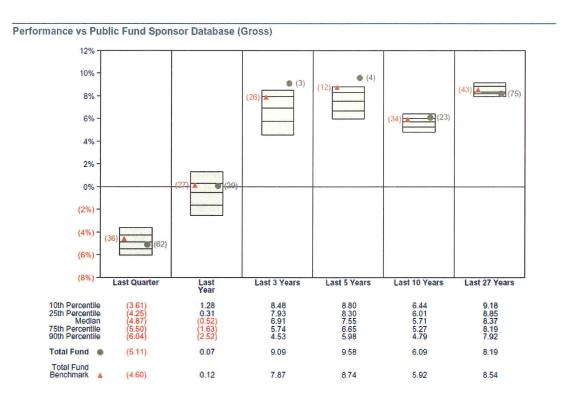


These are time weighted rates of return. Period to period these returns account for cash flows so that if the Board gives one of their infrastructure managers \$1K it will not be seen in the return. This levels the playing field, and then quarterly or monthly results are taken and compounded together. Macquarie wants to be evaluated on a money weighted basis because there is an initial outflow and they make money on that over time, receiving income that they pay out to their limited partners. If there is \$100, and over 5 years no money is earned, the investor starts with \$100 and ends with \$100, which would have a 0% time weighted return. Money weighted rate of return differs because at a period where a portfolio has declined, if the investor decides to give the manager more money and they do well with it, a difference will be created between the time weighted and money rated rates of return. Macquarie wants to be evaluated on a money weighted return basis because it is the concept of the internal rate of return, which is the rate that makes the net present value equal to 0. The graph represents time weighted rates of return and incorporates currency. Macquarie owns 2 airports, one in Brussels and one in Copenhagen. They are doing some development in each of the airports, they have a strong income stream, and they are actually doing quite well. There is an unrealized loss over the last year of 2% from currency. It is a result of the stronger US Dollar because Macquarie is not hedging their currency exposures. On a time weighted basis the Board is getting 5%, net IRR since inception for this portfolio is 9.5%. Despite that 2% infrastructure has been a strong performer for the fund. About 2 years ago Steel River presented to the Board and said they had 8 portfolio holdings, the fund closed in 2008 and has a 20 year life, so the Board will probably be in it until 2028. 40% of their initial investment was in a company called Natural Gas Pipeline (NGPL), and the company had a lot of issues. The initial capital investment in NGPL was \$702M; today the fair value is \$66.7M. All signs pointed toward this fund breaking even over its 20 year history, however something has emerged that has been very positive. An initial 30% investment (\$564M) was in Steel River Ventures. They own natural gas utilities in western Pennsylvania and western Virginia, and with the shale development in western Pennsylvania, and with the lower cost of natural gas it is now valued at \$1.4B which more than makes up for the shortfall from NGPL. These valuations can change over time but as of right now the net gain on this fund is positive, which is good news because 2 years ago they thought it would only break even.

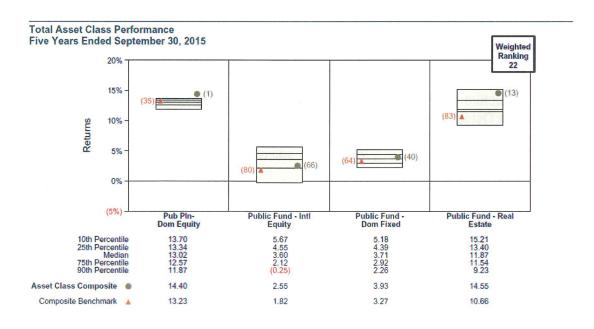
Mr. O'Hare asked if there was a way to show this in the monthly investment report.

Mr. Weightman answered they would have to add the money weighted rate of return which lags by a quarter. He recommended the Board schedule Steel River representatives to come and talk about their investments and asked if they could schedule it for February because he would like to be present.

The Board requested Steel River be scheduled to present to the Board at the meeting scheduled for February 25, 2016.



Mr. Weightman gave a quick commentary on the Total Fund represented in the chart above. The Board tends to have more US equity exposure than peers which has shown through in the results shown.



Mr. Weightman discussed asset class performance vs. benchmark and peers, as represented in the chart above. International equity is the area where there have been some difficulties, specifically with Aberdeen.

Relative Attribution Effects for Quarter ended September 30, 2015

Style Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Style Allocation	Total Relative Return
Large Cap Equity Small/Mid Cap Equity Fixed Income Real Estate Infrastructure International Equity	39% 12% 22% 8% 5% 13%	36% 10% 26% 8% 5% 15%	(6.69%) (8.72%) (0.80%) 3.51% 1.04% (12.13%)	(6.44%) (10.30%) 1.23% 3.68% 0.51% (12.17%)	(0.09%) 0.19% (0.45%) (0.01%) 0.03% 0.01%	(0.07%) (0.08%) (0.20%) 0.01% 0.02% 0.14%	(0.16%) 0.10% (0.65%) (0.00%) 0.05% 0.15%
Total			(5.11%) =	(4.60%)	(0.32%) +	(0.19%)	(0.51%)

Mr. Weightman went over the information given in the Relative Attribution Effects table above. The manager effect tells the Board how well the active managers have performed vs. their benchmarks; about 2% value has been added. Large cap equity has been strong adding 28 basis points, primarily from T. Rowe Price. Small/mid cap equity has added 64 basis points, coming from Pyramis. Fixed income is the main detractor at 52 basis points, which has been brought down vs. the benchmark due to credit and high yield exposure. International equity detracted 30 basis points because of Aberdeen's performance. The style allocation tells how over or underweights in a particular area of the market will affect performance. In general the Board is slightly overweight in US equity, slightly underweight in fixed income, and underweight in international equity as well and this all affected the fund's performance negatively. The style allocation gets down to how closely the Board monitors and manages the portfolio to the target allocation, and over a long period of time that would be expected to be closer to 0.

Mr. O'Hare stated he did not understand the fee structure discussed by PIMCO at the meeting held on 10/30/15; and requested a future agenda item to discuss it.

D. Articles for Board Member Education / Discussion

1. Saving Public Defined Benefit Plans

E. Call to Audience

John O'Hare introduced Claire Beaubien as the newly appointed CTRA representative, appointed by a unanimous vote from the CTRA Board.

F. Future Agenda Items

- PIMCO fee structure and how it relates to the Fund's performance in 2015
- Approval of the October 30, 2015 meeting minutes
- Update on TSRS Code revisions to be approved by Mayor and Council
- Update on process and interview questions for selection of Plan Administrator

Jorge Hernández asked if the oral board interview questions would be presented to the Board.

Silvia Amparano answered no because they were not public record, but the Board was welcome to submit any questions and ideal answers to her office.

Acting Chairman Coffey asked if a meet and greet would be scheduled where the Board could get some exposure to the candidates.

Ms. Amparano advised it would have to be at the January 2016 Board meeting, after the oral board interviews have taken place and the candidate list had been condensed to a few of the best candidates, because if enough board members to reach a quorum attended it would have to be treated as an open meeting. The

Board would be welcome to provide feedback and opinions to her after the meeting. The candidates could present to the Board, or the meeting could be more informal depending on the Board's preference.

John O'Hare asked who would make the final decision about which candidate to hire.

Ms. Amparano answered that ultimately it was her responsibility as the finance director but she would consider any input from the Board.

G. Adjournment

Approved:

A motion to adjourn was made by Rebecca Hill, 2nd by Jorge Hernández, and passed by a vote of 5 – 0 (Acting Chairman Coffey did not vote).

Meeting adjourned at 9:22 AM.

Robert Fleming

Chairman of the Board

Silvia Navarro

Treasury Administrator

Date